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EXAMINER

KAWSAR, ABDULLAH AL

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/815,126	Applicant(s) JOSHI ET AL.	
	Examiner ABDULLAH AL KAWSAR	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25,27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-25 and 27-30 are pending.

Claim Objections

2. Claim 30 is objected to because of the following informalities:

Claim 30, line 1, "The computer-readable medium" should read "The computer-readable storage medium". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 5-8, 11-12, 15-17, 20-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al.(Short) US Patent No. 6178529, in view of Chao et al.(Chao) US Patent No. 6393485.

5. As per claim 1, Short teaches the invention substantially as claimed including a method comprising:

determining whether a resource in a first cluster can be allocated to provide a quantity of the resource to an application (col 10, lines 62-67 through col 11, lines 1-4);

if the resource in the first cluster cannot be allocated to provide the quantity of the resource to the application, determining whether the first cluster can be reconfigured to provide the quantity of the resources to the application (col 8, lines 27-36);

if the first cluster can be reconfigured, enabling the first cluster to provide the quantity of the resource to the application by reconfiguring the first cluster (col 1, lines 31-34; col 7, lines 32-43); and

Short does not specifically disclose if the first cluster cannot be reconfigured, restarting the application in a second cluster having a sufficient amount of the resource to provide the quantity of the resource to the application.

However, Chao teaches if the first cluster cannot be reconfigured, restarting the application in a second cluster having a sufficient amount of the resource to provide the quantity of the resource to the application (col 3, lines 23-27; col 5, lines 40-45; col 7, lines 34-43).

6. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Chao into the method of Short to restarting the application in a second cluster having a sufficient amount of the resource to provide the quantity of the resource to the application. The modification would have been obvious because one of the ordinary skills of the art would want to be able to utilize the available resource in a multi-cluster based system between different clusters, nodes and servers to prevent system failure.

7. As per claim 2, Short teaches selecting the application to be allocated the quantity of the resource from a plurality of applications in accordance with a business priority for the application (col 7, lines 22-31).

8. As per claim 5, Short teaches monitoring performance of a plurality of applications running in the first cluster (col 2, lines 1-5); and

if performance of one application of the plurality of applications fails to satisfy a criterion, requesting to allocate a second quantity of the resource for the one application to enable the performance of the one application to satisfy the criterion(col 1, lines 31-34).

9. As per claim 6, Short teaches the first cluster is remote from the second cluster (col 1, lines 62-65; col 2, lines 51-54).

10. As per claim 7, Short teaches the determining whether the resource in the first cluster can be allocated to provide the quantity of the resource to the application is performed in response to failure of the application (col 7, lines 32-35).

11. As per claim 8, Short teaches the determining whether the resource in the first cluster can be allocated to provide the quantity of the resource to the application is performed in response to starting the application (col 8, lines 3-6; lines 26-31).

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12. As per claims 11, 16 and 21, they have similar limitations as claim 1 above. Therefore, they are rejected under the same rational as of claim 1 above.

13. As per claims 12, 17 and 22, they have similar limitations as claim 2 above. Therefore, they are rejected under the same rational as of claim 2 above.

14. As per claims 15, 20 and 25, they have similar limitations as claim 5 above. Therefore, they are rejected under the same rational as of claim 5 above.

15. Claims 3, 9, 10, 13, 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al.(Short) US Patent No. 6178529, in view of Chao et al.(Chao) US Patent No. 6393485, as applied to claims 1, 11, 16 and 21 above, and further in view of Trossman et al.(Trossman) US Patent No. 7308687.

16. As per claim 3, Short and Chao do not specifically disclose adding a second quantity of the resource to the first cluster.

However, Trossman teaches adding a second quantity of the resource to the first cluster (col 11, 53-57).

17. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Fong into the combined method of Chao and Short to adding a second quantity of the resource to the first cluster. The modification would have been

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obvious because one of the ordinary skills of the art would want to be able to add or remove resources to the cluster according to the application necessity to be able to have a stable system execution.

18. As per claim 9, Trossman teaches the determining whether the resource in the first cluster can be allocated to provide the quantity of the resource to the application is performed in response to identifying a problem with performance of the application (col 8, lines 12-23).

19. As per claim 10, Trossman teaches the determining whether the resource in the first cluster can be allocated to provide the quantity of the resource to the application is performed in response to determining that the application is not in conformance with a policy (col 3, lines 35-45, lines 61-67).

20. As per claims 13, 18 and 23, they have similar limitations as claim 3 above. Therefore, they are rejected under the same rational as of claim 3 above.

21. Claims 4, 14, 19 and 24, 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al.(Short) US Patent No. 6178529, in view of Chao et al.(Chao) US Patent No. 6393485, as applied to claims 1, 11, 16 and 21 above, and further in view of Fong et al.(Fong) US Patent No. 6366945.

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22. As per claim 4, Short and Chao do not specifically disclose partitioning the resource within the first cluster.

However, Fong teaches partitioning the resource within the first cluster (col 1, lines 6-12; lines 38-45).

23. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Fong into the combined method of Chao and Short to partitioning the resource within the first cluster. The modification would have been obvious because one of the ordinary skills of the art would want to be able to modify the available resources to illuminate the problematic resources and isolate them from rest of the application for repair and have the system running without interruption.

24. As per claim 27, Fong teaches wherein the first cluster comprises a plurality of nodes, wherein at least one node among the plurality of nodes is a multiprocessor node, and the reconfiguring comprises partitioning the multiprocessor node into multiple nodes (col 1, lines 6-12; lines 14-26; col 3, lines 11-19; col 5, lines 9-21).

25. As per claims 14, 19 and 24, they have similar limitations as claim 4 above. Therefore, they are rejected under the same rationale as of claim 4 above.

26. As per claims 28-30, they have similar limitations as claim 27 above. Therefore, they are rejected under the same rationale as of claim 27 above.

Response to Arguments

27. Applicant's arguments with respect to claims 1-25 and 27-30 have been considered but they are not persuasive.

28. In remarks applicant argues:

(1) Short fails to teach provide a quantity of resource to an application.

(2) Short fails to teach determining whether the first cluster can be reconfigured to provide the quantity of the resources to the application.

(2) Chao fails to teach if the first cluster cannot be reconfigured, restarting the application in a second cluster having a sufficient amount of the resource to provide the quantity of the resource to the application.

29. Examiner respectfully disagree with applicant:

i. As to point (1), applicant supports his argument mentioning that Short teaches monitoring resource health but does not disclose or teach “determining whether a resource in a first cluster can be allocated to provide a quantity of the resource to an application”. Examiner respectfully disagrees with the applicant. Short teaches determining if the resources in a cluster are available by monitoring if the resource is alive with the resource monitoring system(col 10, lines 62-67 through col 11, lines 1-4), wherein the resources are allocated to an application for providing services (col 5, lines 46-57). All the resources in a cluster are allocated to application and are monitored to

confirm that the resources are available for the functionality of the application to be able to provide services to the users that require the application service.

ii. As per claim (2), applicant supports his argument mentioning that short fails to teach "determining whether the first cluster can be reconfigured to provide the quantity of the resources to the application" as Short teaches restarting a resource and that does not reconfigure or alter the resource. Examiner respectfully disagrees with the applicant. Short teaches restarting a failing resource locally by trying to restart the resource. As the failed or non working resource is restarted it is being re-initialized/ reconfigured which tries to recover the failed portion of the resource to be reused by the application, by restarting a resource the system tries to resolve the issue that caused the failure of the system to be reused and thus reconfigures the resource (col 8, lines 27-36).

iii. As to point (3), applicant supports his argument mentioning that Chao teaches a cluster with two nodes where the failover will move resources from one node to another thus Chao fails to teach restarting the application in a second cluster when the first cluster fails and Chao fails to teach reconfiguring a cluster. Examiner respectfully disagrees with the applicant. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. The rejection is a 103 rejection with Short in view of Chao. Short teaches resource failover within a single cluster, when a resource fails within a cluster the system tries to restart (reconfigure/re-initialize) the

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resource to recover the failure. If the system fails to restart the resource or recover the failure the resource is moved to a different system in the cluster (Short: col 8, lines 27-36). Short does not specifically disclose that the resource can be restarted in a different cluster where Chao specifically disclose if a resource node fails the multi-cluster system can restart those resources in a different sub-cluster (Chao: col 3, lines 23-27;). Short also teaches that a resource from a failed node can be also restarted to another node in the same cluster and in a multi-cluster system the failover management is not limited within the same cluster instead in can be managed between any nodes in a large cluster that includes multiple sub-cluster (col 5, lines 40-45; col 7, lines 34-43). It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Chao into the method of Short to restarting the application in a second cluster having a sufficient amount of the resource to provide the quantity of the resource to the application. The modification would have been obvious because one of the ordinary skills of the art would want to be able to utilize the available resource in a multi-cluster based system between different clusters, nodes and servers to prevent system failure (paragraph 7).

Conclusion

30. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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31. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULLAH AL KAWSAR whose telephone number is (571)270-3169. The examiner can normally be reached on 7:30am to 5:00pm, EST.

33. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai T. An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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34. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VAN H NGUYEN/
Primary Examiner, Art Unit 2194

/Abdullah-Al Kawsar/
Examiner, Art Unit 2195